IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Pankaj MEHRA	§	Confirmation No.:	3837
Serial No.:	10/694,323	§	Group Art Unit:	2443
Filed:	10/27/2003	§	Examiner:	Mark D. Fearer
For:	Configuration Validation Checker	§	Docket No.:	200309900-1

APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Date: September 9, 2009

Sir:

Appellant hereby submits this Appeal Brief in connection with the above-identified application. A Notice of Appeal was electronically filed on July 9, 2009.

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I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, L.P. (HPDC), a Texas Limited Partnership, having its principal place of business in Houston, Texas. HPDC is a wholly owned affiliate of Hewlett-Packard Company (HPC). The Assignment from the inventors to HPDC was recorded on October 27, 2003, at Reel/Frame 014644/0622.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals or interferences.

III. STATUS OF THE CLAIMS

Originally filed claims:	1-17.
Claim cancellations:	5-6, 8 and 12.
Presently pending claims:	1-4, 7, 9-11 and 13-17.
Presently appealed claims:	1-4, 7, 9-11 and 13-17.

IV. STATUS OF THE AMENDMENTS

No claims were amended after the Final Office Action dated May 14, 2009.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

This section provides a concise explanation of the subject matter defined in each of the independent claims, referring to the specification by page and line number or to the drawings by reference characters as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified with a corresponding reference to the specification or drawings where applicable. The specification references are made to the application as filed by Appellant. The citation to passages in the specification or drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element. These specific references are not exclusive; there may be additional support for the subject matter elsewhere in the specification and drawings.

Appellant's contribution is directed to a network switch 300 (Fig. 7) that is able to monitor its ports 308 and detect when a link up/down event occurs on that port 308. P. 11, ll. 4-6. An event in which a link becomes non-functional is referred to as a link "down" event. P. 10, ll. 20-21. An event in which a link is newly established is referred to as a link "up" event. P. 10, ll. 21-22. When the switch 300 detects the occurrence of a link up/down event on a port 308, the switch 300 modifies its routing behavior accordingly. P. 11, l. 4 – p. 12, l. 5.

Claim 1 is directed to a switch 300 that comprises a plurality of ports 308. Fig. 7 and p. 10, ll. 12-24. The switch 300 also comprises a plurality of link up/down detection logic units 306, where each link up/down detection logic unit 306 is associated with a port 308 and is configured to detect a change in the state of a link associated with the port 308. P. 11, ll. 4-6. The switch 300 further comprises a configuration validation checker 302 coupled to each of the link up/down detection logic units 306. Fig. 7 and p. 10, ll. 12-24. The configuration validation checker 302 causes the switch 300 to change its routing behavior with regard to a port 308 for which a link up/down detection unit 306 has detected a state change. P. 11, l. 4 – p. 12, l. 5. If topology information contained in the switch 300 does not comport with topology information received from an external

entity, the newly received topology information is prevented from being used by the switch 300. P. 12, ll. 10-22; Figure 7.

Dependent claim 4 is directed to the link up/down detection logic units 306 of claim 1. Each link up/down detection logic unit 306 informs the configuration validation checker 302 when a non-functional link to an associated port 308 becomes functional. P. 11, ll. 4-6; Figure 7. The configuration validation checker 302 responds by receiving an identifier value from another entity coupled to the switch 300 via the functional link and comparing the identifier value received from the another entity with local topology information contained in the switch 300. P. 12, ll. 6-10; Figure 7. If the identifier value matches a value in the local topology information, the configuration validation checker 302 permits the switch 300 to route packets over the functional link; if the identifier value does not match a value in the local topology information, the configuration validation checker 302 discards all packets targeting the functional link. P. 12, ll. 10-22; Figure 7.

Claim 7 is directed to a switch 300 that comprises a plurality of ports 308. Fig. 7 and p. 10, ll. 12-24. The switch 300 also comprises a plurality of link up/down detection logic units 306, where each link up/down detection logic unit 306 is associated with a port 308 and is adapted to detect a change in the state of a link associated with the port 308. P. 11, ll. 4-6. The switch 300 further comprises means[1] for causing the switch 300 to change its routing behavior with regard to a port 308 for which a link up/down detection unit 306 has detected a state change. P. 11, l. 4 – p. 12, l. 5. The switch 300 also comprises means[1] for receiving an indication from the link up/down detection logic units that a link to an associated port has become non-functional. P. 10, ll. 22-24; p. 11, ll. 4-6. The

[1] 37 C.F.R. § 41.37(c)(1)(v) requires that means-plus-function claims be identified and that the "structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters." The means described here may refer to the configuration validation checker 302 shown in Figure 7 and described in the specification, p. 11, l. 4 – p. 12, l. 5. These means may be further described elsewhere in the specification.

switch 300 further comprises means[1] for ceasing routing of all packets. P. 11, ll. 7-10.

Dependent claim 9 is directed to the switch 300 of claim 7, but also comprises means[1] for ceasing routing of all packets destined to that link. P. 11, ll. 4-20.

Claim 10 is directed to a network that comprises a plurality of switches 100-116 (Fig. 1) coupled together and at least one end node 120-126 coupled to at least one switch. P. 3, ll. 28-31. At least one switch 300 (Fig. 7) includes a link up/down detection logic 306 associated with a port 308 and configured to detect a change in the state of the link. P. 11, ll. 4-6. The at least one switch 300 further includes a configuration validation checker 302 coupled to the link up/down detection logic 306. P. 11, l. 4 – p. 12, l. 5. The configuration validation checker 302 causes the switch 300 to change its routing behavior with regard to the port 308 if the link up/down detection logic 306 has detected a state change. P. 11, l. 4 – p. 12, l. 5. The link up/down detection logic 306 informs the configuration validation checker when the link becomes non-functional, and the configuration validation checker responds by rejecting all packets destined to the link. P. 10, l. 22 – p. 11, l. 20.

Claim 13 is directed to a method performed by a switch 300 contained in a system 90 (Figs. 1 and 7). The method comprises the switch 300 monitoring a port 308 for a link down event or a link up event, where the link down event is indicative of a link from the switch 300 to an entity becoming non-functional and the link up event is indicative of a newly established link from the switch 300 to the entity. P. 11, ll. 4-6. The switch 300 detects a link down event associated with the switch 300 or a link up event associated with the switch 300. P. 11, ll. 4-6. The method also comprises receiving a packet into the switch 300 and the switch 300 determining if the packet is to be routed out through the port 308 associated with the detected link down event or link up event. P. 8, ll. 13-23. If the switch determines that the packet is to be routed out through the port

associated with a detected link down event, the switch discards the packet. P. 11, ll. 4-10. If the switch determines that the packet is to be routed out through the port associated with a detected link up event, the switch routes the packet through the port. P. 11, l. 21 – p. 12, l. 5.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether the Examiner erred in rejecting claims 1-3, 7, 9-10 and 13-17 under 35 U.S.C. § 103(a) as allegedly obvious in view of Sawada et al. (U.S. Pat. No. 6,907,470, hereinafter "Sawada"), Ball et al. (U.S. Pub. No. 2003/0046390, hereinafter "Ball") and Weil et al. (U.S. Pub. No. 2002/0093954, hereinafter "Weil").

Whether the Examiner erred in rejecting claims 4 and 11 under 35 U.S.C. § 103(a) as allegedly obvious in view of Sawada, Ball, Weil and Kao et al. (U.S. Pat. No. 7,054,951, hereinafter "Kao").

VII. ARGUMENT

A. Summary of Ball

The relevant portion of Ball cited by the Examiner (paragraph [0020]) is directed to network segmentation. Specifically, Ball teaches that a VLAN-enabled switch segments stations connected thereto into logically defined groups. This grouping is performed on a VLAN-by-VLAN basis. Specifically, network traffic received from an end-station belonging to a particular VLAN is output only on other ports that are also associated with that VLAN. In some cases, VLANs may be defined between different domains connected by a router. In such cases, the router may pass traffic between different domains. The router also may pass traffic between VLANs in the same domain because VLANs generally do not share user information. To accomplish the foregoing, the router is configured as a member of all VLANs.

B. The Examiner erred in rejecting claims 1-3, 7, 9-10 and 13-17 as allegedly obvious in view of the combination of Sawada, Ball and Weil because the combination fails to disclose all limitations

Claims 1-3, 7, 9-10 and 13-17 stand rejected as allegedly obvious in view of Sawada, Ball and Weil. Claim 1 is representative of this grouping of claims. The grouping should not be construed to mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

Representative claim 1 requires "wherein the configuration validation checker receives topology information from an entity external to the switch and prevents said topology information from being used by the switch for routing purposes if the topology information fails to comport with local topology information stored in the switch." The Examiner asserts that Ball teaches this limitation at paragraph 0020. Office Action, p. 4 and 14-15. Appellant respectfully submits that the Examiner is mistaken. As explained above in

Section VII(A), paragraph 0020 of Ball only discusses the general setup of virtual LANs (VLANs). Ball explains what a VLAN is and states that broadcast traffic disseminated within a particular VLAN is routed only to ports within the VLAN. Para. 0020, ll. 5-8. Ball also explains that the broadcast traffic is blocked from ports not belonging to that VLAN. Para. 0020, ll. 8-10. Ball even explains that in the context of VLANs, routers may pass traffic from one domain to another and from one VLAN to another. Para. 0020, ll. 10-14. However, at no point does Ball appear to teach or even suggest any sort of comparison of local topology information between switches, as claimed, nor does Ball mention preventing a switch from using topology information as a result of such a comparison.

The Examiner appears to be trying to analogize determination of VLAN membership (*i.e.*, whether a particular port belongs to or does not belong to a particular VLAN) to a comparison of topology information. As known to those of ordinary skill in the art, however, mere VLAN membership is not the same as topology information. If VLAN status could properly be construed as topology information, then interpreting claim 1 in light of Ball would produce dubious results. For instance, a switch's local VLAN status would be compared to a VLAN status received from outside that switch and, if the two failed to comport, the VLAN status received from outside the switch would not be used by the switch. Obviously, applying Ball to claim 1 in this manner produces nonsensical results. Sawada and Weil fail to satisfy Ball's deficiencies.

For at least these reasons, the Examiner erred in rejecting claim 1 using the combination of Sawada, Ball and Weil. Thus, Appellant respectfully asks the Board to reverse the rejections of all claims in the claim 1 grouping and to set these claims for allowance.

C. The Examiner erred in rejecting claims 4 and 11 using the combination of Sawada, Ball, Weil and Kao because the combination fails to teach all limitations, because Weil teaches against the claims, and because Weil teaches away from combination with Sawada and Kao

Claims 4 and 11 stand rejected as allegedly obvious in view of Sawada, Ball, Weil and Kao. Claim 4 is representative of this grouping of claims. The grouping should not be construed to mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

The Examiner erred in rejecting claim 4 at least because it depends on patentable, independent claim 1. For this reason alone, Appellant respectfully submits that the Board should reverse the Examiner's rejection of claims 4 and 11.

The Examiner erred in rejecting claim 4 for a second reason.[2] Specifically, Weil teaches away from the limitations of claim 4. More specifically, claim 4 requires discarding all packets "if the identifier value does not match a value in the topology information." However, Weil explicitly disparages discarding even one packet, much less **all packets**: "...the packet may either be discarded or returned. Such a scenario is **unacceptable** for high quality of service traffic such as voice traffic." Paragraph 0010, ll. 13-15. MPEP § 2145(X)(D)(1) provides:

> [P]rior art must be considered in its entirety, including disclosures that teach away from the claims ...
>
> A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness... *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) ...

[2] In the *Response to Office Action Dated November 17, 2008*, Appellant inadvertently made this argument and the subsequent argument with respect to claim 1. The two arguments should have been made with respect to claim 4, because claim 4 contains the limitation on which the arguments are based. In any case, the Examiner either ignored the arguments or found them unpersuasive and maintained the rejection.

> Furthermore, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed.." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

The fact that claim 4 requires discarding all packets in certain situations, while Weil explicitly describes the discarding of packets as simply "unacceptable" for high-quality service applications such as those described in the art of record, constitutes strong evidence that Weil teaches away from the claims and is a significant factor that points toward non-obviousness. Further, Appellant distinguishes the present situation from that in *In re Fulton*, because Weil actually does "criticize, discredit, or otherwise discourage the solution claimed." Thus, the Examiner erred in rejecting claim 4 using the combination of Sawada, Ball, Weil and Kao for this additional reason.

The Examiner erred in rejecting claim 4 for a third reason. Specifically, Weil teaches away from combination with Kao and Sawada. As explained above, Weil describes the discarding of packets as "unacceptable." Paragraph 0010, ll. 13-15. Kao, however, teaches the discarding of query packets, as the Examiner pointed out in the Office Action. Kao, col. 12, ll. 27-39. Sawada also teaches discarding packets. Sawada, col. 11, l. 35. MPEP § 2145(X)(D)(2) makes abundantly clear that "[i]t is improper to combine references where the references teach away from their combination." Thus, the Examiner erred in rejecting claim 4 using the combination of Sawada, Ball, Weil and Kao for this additional reason.

Based on the foregoing, Appellant respectfully asks the Board to reverse the Examiner's rejections of claims 4 and 11 and to set these claims for allowance.

D. Conclusion

For the reasons stated above, Appellant respectfully submits that the Examiner erred in rejecting all pending claims. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1. A switch, comprising:

a plurality of ports;

a plurality of link up/down detection logic units, each link up/down detection logic unit associated with a port and configured to detect a change in the state of a link associated with the port; and

a configuration validation checker coupled to each of the link up/down detection logic units, said configuration validation checker causes the switch to change its routing behavior with regard to a port for which a link up/down detection unit has detected a state change;

wherein the configuration validation checker receives topology information from an entity external to the switch and prevents said topology information from being used by the switch for routing purposes if the topology information fails to comport with local topology information stored in the switch.

2. The switch of claim 1 wherein each link up/down detection logic unit informs the configuration validation checker when a link to an associated port becomes non-functional, and the configuration validation checker responds by discarding all packets.

3. The switch of claim 1 wherein each link up/down detection logic unit informs the configuration validation checker when a link to an associated port

becomes non-functional, and the configuration validation checker responds by discarding all packets destined to that link.

4. The switch of claim 1 wherein each link up/down detection logic unit informs the configuration validation checker when a non-functional link to an associated port becomes functional, and the configuration validation checker responds by:

receiving an identifier value from another entity coupled to the switch via the functional link;

comparing the identifier value received from the another entity with said local topology information contained in the switch;

if the identifier value matches a value in the local topology information, permitting the switch to route packets over the functional link; and

if the identifier value does not match a value in the local topology information, discarding all packets targeting the functional link.

7. A switch, comprising:

a plurality of ports;

a plurality of link up/down detection logic units, each link up/down detection logic unit associated with a port and adapted to detect a change in the state of a link associated with the port;

means for causing the switch to change its routing behavior with regard to a port for which a link up/down detection unit has detected a state change; and

means for receiving an indication from the link up/down detection logic units that a link to an associated port has become non-functional and means for ceasing routing of all packets.

9. The switch of claim 7 further including means for ceasing routing of all packets destined to said link.

10. A network, comprising:

a plurality of switches coupled together;

at least one end node coupled to at least one switch;

wherein at least one switch includes:

a link up/down detection logic associated with a port and configured to detect a change in the state of the link; and

a configuration validation checker coupled to the link up/down detection logic, said configuration validation checker causes the switch to change its routing behavior with regard to the port if the link up/down detection logic has detected a state change;

wherein the link up/down detection logic informs the configuration validation checker when said link becomes non-functional, and the

configuration validation checker responds by rejecting all packets destined to said link.

11. The network of claim 10 wherein the link up/down detection logic unit informs the configuration validation checker when the link becomes non-functional, and the configuration validation checker responds by rejecting all packets.

13. A method performed by a switch contained in a system, comprising:

the switch monitoring a port for a link down event or a link up event, said link down event indicative of a link from the switch to an entity becoming non-functional and said link up event indicative of a newly established link from the switch to said entity;

the switch detecting a link down event associated with said switch or a link up event associated with said switch;

receiving a packet into said switch;

the switch determining if said packet is to be routed out through said port associated with the detected link down event or link up event;

if the switch determines that the packet is to be routed out through said port associated with a detected link down event, the switch discarding the packet; and

if the switch determines that the packet is to be routed out through said port associated with a detected link up event, the switch routing the packet through said port.

14. The method of claim 13 further including if the switch determines that the packet is to be routed out through said port associated with a detected link down event, discarding all packets received by the switch.

15. The method of claim 13 further including requesting the entity to provide a unique identifier to the switch.

16. The method of clam 15 further including the switch receiving a unique identifier from the entity, comparing the unique identifier received from the entity to state information contained in the switch and, if the unique identifier from the entity does not match a value in the state information, discarding a packet destined for the entity.

17. The method of claim 16 wherein further including if the unique identifier from the entity matches a value in the state information, permitting packets destined for the entity to be routed from the switch to the entity.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.